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2   Links: 148, 150, 156

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7   UNITED STATES DISTRICT COURT

8   CENTRAL DISTRICT OF CALIFORNIA

9   WESTERN DIVISION

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11 OPLUS TECHNOLOGIES, LTD.,	Case No. 2:12-cv-05707-MRP-Ex
12 Plaintiff,	
13 v.	**Order Granting in Part and Denying in Part Defendant Vizio, Inc.'s Motion for Summary Judgment of Invalidity, Granting Defendant Vizio's Motion for Summary Judgment of Noninfringement, and Denying Plaintiff Oplus Technologies, Ltd.'s Motion to Compel**
14 SEARS HOLDINGS	
15 CORPORATION; VIZIO, INC.,	
16 Defendants.	
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18	

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20   **I.   INTRODUCTION**

21   Plaintiff Oplus Technologies, Ltd. ("Oplus") has sued Defendant Vizio, Inc.

22   ("Vizio") for infringement of two video signal processing patents: U.S. Patent No.

23   6,239,842 ("the '842 Patent") and U.S. Patent No. 7,271,840 ("the '840 Patent").

24   Oplus asserted claims 7, 8, 9, 14, and 15 of the '842 Patent and claims 56–59 and

25   62 of the '840 Patent. Vizio moves for summary judgment of invalidity as to the

26   asserted claims of the '842 Patent as anticipated under 35 U.S.C. § 102 and as to

27   the asserted claims of the '840 Patent for lack of both written description and

28   enablement under 35 U.S.C. § 112.

II.   TECHNICAL BACKGROUND

Modern televisions are complicated electrical systems with numerous internal components that are necessary to allow televisions to receive a wide array of audio and video inputs (for example, analog video signals may be encoded on composite video, S-video, or component video inputs, among others) and generate an appropriate display output. In order to meet this need, televisions include signal processing components that receive input signals and perform processing functions in order to create a display output. Both the '842 Patent and the '840 Patent relate to these video signal processing functions. Specifically, the '842 Patent addresses the process of deinterlacing interlaced video signals. The '840 Patent addresses the process of correcting errors in streaming digital video signal.

The '842 Patent describes a method for converting an interlaced video signal into a deinterlaced signal for display on progressive scan displays. A video signal is composed of sequential images called frames that are scanned onto a display at a certain frequency. On a progressive or deinterlaced display, the frame includes a value for every pixel on the display. An interlaced video signal includes frames with pixel values for every other row of pixels, totaling half of the pixels on the display. Each sequential frame includes pixels values for the rows that were not included in the frame before it. The interlaced signal thereby takes advantage of a luminous optical illusion effect in order to increase a perceived frame rate while decreasing the bandwidth required to transmit the video signal. Since not all video displays are capable of scanning pixel rows in the manner required to display interlaced video signal, deinterlacing must be applied to the signal before it may be displayed on progressive televisions. Deinterlacing uses an algorithm to provide values for the pixels in the rows not included in each frame of the interlaced signal.

Oplus asserts two independent claims from the '842 Patent, claim 7 and claim 14. Claim 7 describes:

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7. A method for de-interlacing an interlaced video format, the method comprising the steps of:

(a) receiving the interlaced video format feature [*sic*] a sequence of fields of pixels to be de-interlaced;

(b) evaluating logical operations of linear combinations of values selected from the group consisting of averages of known values of spatial pixels, averages of said known values of temporal pixels, standard deviations of said known values of said spatial pixels, standard deviations of said known values of said temporal pixels, minimums of said standard deviations of said known values of said spatial pixels, absolute values of differences between said averages of said known values of said temporal pixels and said known values of said spatial pixels, said known values of said spatial pixels, and a plurality of constants, said logical operations selected from the group consisting of greater than, greater than or equal to, less than, less than or equal to, 'and', 'or', and 'xor'; and

(c) deciding upon assignment of values to missing spatial pixels according to results of said logical operations.

Claim 14 contains a method claim with the same preamble and steps as claim 7, except that a new step (b) is inserted. Steps (b) and (c) of claim 7 are listed as steps (c) and (d) respectively in claim 14. In addition, five instances of the word "said" are added to account for the introduction of new antecedent bases in new step (b), and the word "feature" in step (a) is corrected to read "featuring." New step (b) describes:

(b) using a current spatial field featuring missing spatial pixels and said spatial pixels with known values, located in said sequence of said fields, and one temporal field featuring temporal pixels with known

1   values, located in said sequence of said fields, for determining values

2   of said missing pixels of said current spatial field[.]

3   The '840 Patent describes a method for determining pixel entropy in a real time

4   streaming digital video image. Video signals, including both interlaced and

5   progressive video signals, may contain various errors or artifacts. Errors may be

6   created by several sources, including deinterlacing or converting the format of the

7   video signal. Error correction is used to reduce or remove the errors in a video

8   signal in order to increase the quality of the video image.

9   Oplus asserts one independent claim from the '840 Patent, claim 56. Claim 56

10   describes the following steps:

11   (a) receiving and characterizing the streaming digital video image

12   input signal during a pre-determined time interval;

13   (b) assigning and characterizing a local neighborhood of

14   neighboring pixels to each input image pixel of the streaming digital

15   video image input signal, in a temporal interlaced sequence of three

16   consecutive fields in a global input grid of pixels included in the

17   streaming digital video input image signal, said three consecutive

18   fields being a previous field, a next field, and a current field; and

19   (c) determining the entropy of each virtual pixel, of each previous

20   pixel, and of each next pixel, in said temporal interlaced sequence of

21   said three consecutive fields, relative to said assigned and

22   characterized local neighborhoods of said neighboring pixels . . . .

23   Step (c) of claim 56 comprises four substeps. Substep (i) describes calculating

24   "pixel inter-local neighborhood parameter" values that each represent a "regional

25   sum of inter-local neighborhood weighted distances." The remaining substeps

26   describe calculating similar parameter values for virtual pixels, adjusting a pixel

27   entropy counter value for virtual pixels and the two temporally adjacent pixels, and

28   calculating entropy values from the entropy counter values. Substep (iv) further

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1   requires that the entropy values be used to decide whether or not to use the pixel

2   values for temporally adjacent fields and thereby correct an error in the streaming

3   digital input signal.

4   Vizio's accused products are all Vizio video products that allegedly perform the

5   methods described in the asserted claims of the '842 and the '840 Patents. In its

6   First Amended Complaint, Oplus identified the Vizio VP505XVT television as an

7   example of a video product that allegedly infringed the '842 Patent and the Vizio

8   P50HDTV10A, VM60P, GV46L and JVP50 televisions as examples of video

9   products that allegedly infringed the '840 Patent. Oplus identified eighteen

10   allegedly infringing Vizio television models in its Infringement Contentions on the

11   basis that the eighteen models used one of three potentially infringing chipsets.

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III.   LEGAL STANDARD

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A.   Summary Judgment

14   The Court shall grant summary judgment if there is no genuine dispute as to

15   any material fact, as supported by facts on the record that would be admissible in

16   evidence, and if the moving party is entitled to judgment as a matter of law. FED.

17   R. CIV. P. 56.; *see Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Anderson v.*

18   *Liberty Lobby, Inc.*, 477 U.S. 242, 250 (1986). In order to grant summary

19   judgment, the Court must identify material facts by reference to the governing

20   substantive law, while disregarding irrelevant or unnecessary factual disputes.

21   *Anderson*, 477 U.S. at 248. The Court must view facts and draw reasonable

22   inferences in favor of the nonmoving party. *Scott v. Harris*, 550 U.S. 372, 378

23   (2007). If there is any genuine dispute about a material fact such that a reasonable

24   jury could return a verdict for the nonmoving party, summary judgment cannot be

25   granted. *Id.* If the party moving for summary judgment does not bear the burden

26   of proof as to a particular material fact, the moving party need only give notice of

27   the absence of a genuine issue of material fact so that the non-moving party may

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1   come forward with all of its evidence. *Exigent Tech., Inc. v. Atrana Solutions,*

2   *Inc.*, 442 F.3d 1301, 1307–08 (Fed. Cir. 2006).

3   **B.**   **Noninfringement**

4   Noninfringement is a question of fact. *Crown Packaging Tech., Inc. v. Rexam*

5   *Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009). Summary judgment of

6   noninfringement requires that "after viewing the alleged facts in the light most

7   favorable to the non-movant, there is no genuine issue whether the accused device

8   is encompassed by the claims." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182

9   F.3d 1298, 1304 (Fed. Cir. 1999). "Summary judgment of noninfringement is . . .

10   appropriate where the patent owner's proof is deficient in meeting an essential part

11   of the legal standard for infringement, because such failure will render all other

12   facts immaterial." *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed.

13   Cir. 2002) (citation omitted).

14   The legal standard for infringement is exacting. "Comparison of the claims to

15   the accused device requires a factual determination that every claim limitation or

16   its equivalent is found in the accused device." *Int'l Rectifier Corp. v. IXYS Corp.*,

17   361 F.3d 1363, 1369 (Fed. Cir. 2004). The patent holder bears the burden of

18   establishing infringement. *Exigent Tech.*, 442 F.3d at 1308. Consequently, the

19   patent holder's failure to show the presence of any single claim limitation or its

20   equivalent in the accused products renders summary judgment of noninfringement

21   appropriate.

22   **C.**   **Invalidity under Anticipation**

23   A patent claim is anticipated under 35 U.S.C. § 102(b) if it was "described in a

24   printed publication in this country . . . more than one year prior to the date of

25   application for patent in the United States." Anticipation is a question of fact.

26   *Zenith Elecs. Corp. v. PDI Commun. Sys.*, 522 F.3d 1348, 1356–57 (Fed. Cir.

27   2008). In order to be anticipated, each and every limitation of the claim must be

28   found in a single prior art reference. *ArcelorMittal France v. AK Steel Corp.*, 700

1   F.3d 1314, 1322 (Fed. Cir. 2012). Because an issued patent is presumed valid

2   under 35 U.S.C. § 282, the party moving for finding of invalidity bears the burden

3   of showing that each asserted claim is anticipated by clear and convincing

4   evidence. *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376 (Fed.

5   Cir. 2009). "In practice, the anticipation inquiry is identical to the infringement

6   inquiry, albeit with a clear and convincing standard of evidence." *Rambus Inc. v.*

7   *Hynix Semiconductor Inc.*, 628 F. Supp. 2d 1114, 1122 (N.D. Cal. 2008).

8   Since each claim in a patent is entitled to "an independent presumption of

9   validity," every claim "stands or falls independent of the other claims."

10 *Continental Can Co. U.S.A. v. Monsanto Co.*, 948 F.2d 1264, 1266–67 (Fed. Cir.

11 1991). Accordingly, in order to anticipate a dependent claim, the prior art

12 reference must show every limitation of both the dependent claim and every

13 limitation of the independent claim from which it depends.

14   **D.   Invalidity under Lack of Written Description and Lack of**

15   **Enablement**

16   A patent must be adequately described in writing and enabled under 35 U.S.C.

17 § 112(a). The patent specification must "contain a written description of the

18 invention" that reasonably conveys to those skilled in the art that the inventor had

19 possession of the claimed subject matter as of the filing date. *Id.*; *see also Ariad*

20 *Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

21 The written description must support the full scope of the claims as construed.

22 *Energy Transp. Grp., Inc. v. William Demant Holding A/S*, 697 F.3d 1342, 1350

23 (Fed. Cir. 2012). Furthermore, the specification must "enable" those skilled in the

24 art to make and use the full scope of the claimed invention without undue

25 experimentation. 35 U.S.C. § 112(a); *see also Magsil Corp. v. Hitachi Global*

26 *Storage Techs., Inc.*, 687 F.3d 1377, 1380 (Fed. Cir. 2012). To determine whether

27 the amount of experimentation is undue, the Federal Circuit has articulated eight

28 factors. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). The written description

1   and enablement requirement do not require that the patent specification disclose

2   information that is well-known in the art, but the knowledge of a person skilled in

3   the art is there to supplement, not substitute for, a basic enabling disclosure. *Streck*

4   *Inc. v. Research & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1285, 1288 (Fed. Cir.

5   2012).

6   The written description inquiry is a question of fact. *Ariad Pharm.*, 598 F.3d at

7   1351. Whether a patent is enabled is a question of law based on underlying factual

8   questions. *Streck*, 665 F.3d at 1288. The standard of proof for factual questions in

9   the written description and enablement inquiries is clear and convincing evidence.

10 *Invitrogen Corp. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1072–73 (Fed. Cir. 2005);

11 *Streck*, 665 F.3d at 1288.

12   **IV.   DISCUSSION**

13 **A.   Noninfringement of the asserted claims of the '842 Patent and the**

14 **   '840 Patent**

15   Vizio is a television company. However, Vizio does not manufacture

16 televisions from scratch. Vizio uses original design manufacturers ("ODMs") for

17 the internal design of their televisions as well as for television repairs. Statement

18 of Uncontroverted Facts and Conclusions of Law for Vizio's Motion for Summary

19 Judgment of Noninfringement ("Noninfringement UF") at 1. ODMs select,

20 procure, and maintain the chipsets used for video processing from chipset

21 manufacturers. *Id.* Vizio itself does not investigate the video processing

22 technology used in its televisions other than by watching a television set before it

23 is distributed. *Id.* at 13. Since Vizio does not investigate the design of its internal

24 components, Vizio knows only basic information regarding each chipset selected

25 by the ODM and does not understand how the accused chipsets work.[1] *Id.* at 2–3.

26

27   [1] Oplus disputes these facts by pointing to service manuals provided to Vizio by component
        manufacturers, Vizio press releases that advertise chipset functionality, and online product
28 reviews, including one review that states that the reviewer spoke with Calvin Lee, a junior
        engineer at Vizio, for assistance in understanding frame interpolation. Oplus' Response to

-8-

1   Oplus alleges that Vizio directly infringes the asserted claims when it tests the

2   televisions and that Vizio indirectly infringes the asserted claims by providing the

3   televisions to consumers and instructing consumers to use analog video inputs that

4   exclusively allow input of interlaced video signals.

5   **1.   Direct Infringement**

6   The asserted claims of the '842 and '840 Patents are method claims. A method

7   claim is "directly infringed only when the [method] is performed." *Joy Techs, Inc.*

8   *v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993). As the accused infringer, Vizio's

9   burden on a motion for summary judgment for noninfringement is to point to an

10   absence of a genuine issue of material fact. *See Exigent Tech.*, 442 F.3d at 1307–

11   08. Here, Vizio points to an absence of evidence that Vizio used the accused

12   televisions with an interlaced video signal. The asserted independent claims of the

13   '842 Patent require "receiving the interlaced video format." The asserted

14   independent claim of the '840 Patent requires receiving an input signal and

15   assigning a local neighborhood "in a temporal interlaced sequence of three

16   consecutive fields." Oplus must therefore provide evidence sufficient to show a

17   dispute of material fact as to whether Vizio performed the claim limitations

18   directed to interlaced signals.

19   Oplus responds by providing a user manual from a Vizio television and a label

20   indicating that Vizio televisions have been tested pursuant to FCC rules, which

21   requires that a device be tested using all external electrical inputs. Oplus does not

22   provide any evidence that Vizio performed the FCC testing or created the user

23   manual. Evidence that a user manual exists and that an unknown party tested the

24

25   Statement of Uncontroverted Facts and Conclusions of Law Re Vizio's Motion for Summary
     Judgment of Noninfringement ("Noninfringement RUF") 1–8. Although this evidence suggests
26   that Vizio knows more about its products than it claims, *see* Noninfringement UF at 2 ("Vizio
     . . . has no understanding of how its products were designed, developed or work."), it does not
27   indicate that Vizio knows the details of the chipset operations, including the signal processing
     algorithms.
28

1   television for FCC compliance is not sufficient to create a genuine dispute of

2   material fact as to whether Vizio itself performed the claim limitation of using the

3   accused method with an interlaced signal. Oplus fails to meet its burden to

4   preclude summary judgment in favor of Vizio as to direct infringement.

5   **2.   Indirect Infringement**

6   An accused infringer may be liable for indirect infringement by inducing others

7   to infringe a patent or by contributing to the infringement of others. 35 U.S.C.

8   § 271(b)–(c). Both inducement and contributory infringement have several

9   required elements. First, there must be an underlying act of direct infringement.

10   Second, the alleged infringer must either contribute to infringement, i.e., sell or

11   offer to sell a component especially made or adapted for infringing use, or induce

12   infringement, i.e., affirmatively act to facilitate infringement. *See id.*; *Tegal Corp.*

13   *v. Tokyo Electron Co.*, 248 F.3d 1376, 1378–79 (Fed. Cir. 2001). Third, the

14   accused infringer must have sufficient scienter by either "actively" inducing or

15   "knowingly" contributing to infringement. *Id.* In order to actively or knowingly

16   cause indirect infringement, the alleged infringer must have knowledge of the

17   allegedly infringed patent. *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S.Ct.

18   2060, 2067–68 (2011).

19   Prior to the filing of this lawsuit, Vizio had no knowledge of the patents in suit.

20   Without knowledge of the patents, Vizio could not have had the sufficient mental

21   state required to induce or contribute to infringement. *See Global-Tech*, 131 S.Ct.

22   at 2067–68 ("[A] violator of § 271(c) must know that the combination for which

23   his component was especially designed was both patented and infringing" and the

24   "same knowledge" is required "for liability under § 271(b).") Vizio neither

25   induced nor contributorily infringed the '842 and '840 Patents prior to the filing of

26   Oplus's complaint.[2]

27

28   [2] Oplus states in its briefing that it is not seeking damages for any pre-filing acts of alleged
infringement. At the hearing, Oplus clarified that it would not seek *de minimis* damages **unless** it

1   **a.   Contributory Infringement After the Filing of the Complaint**

2   Vizio has not sold any allegedly infringing Vizio television or any Vizio

3   television incorporating the allegedly infringing chipsets since the date that Oplus

4   filed its complaint. Supplemental Declaration of Charles Koole in Support of

5   Vizio's Motion for Summary Judgment of Noninfringement, Ex. 17 at 2–3.

6   Contributory infringement requires that the alleged contributory infringer "offer[]

7   to sell or sell[]" an apparatus for use in practicing the patented method. Since

8   Oplus has offered no evidence that Vizio sold any allegedly infringing product

9   after the date of filing of the complaint, Oplus has not met its burden to show

10   contributory infringement.

11   **b.   Induced Infringement After the Filing of the Complaint**

12   Vizio became aware of the '842 and '840 Patents on December 6, 2011, when

13   Oplus served Vizio with the complaint in this lawsuit. However, even after Vizio

14   became aware of the patents in suit, it never became aware of the actual method

15   and algorithm used by the allegedly infringing chipsets to perform the de-

16   interlacing and error correcting functions. For inducement, the alleged infringer

17   must intend to cause the infringing acts, *see Hewlett-Packard Co. v. Bausch &*

18   *Lomb, Inc.*, 909 F.2d 1464, 1469–70 (Fed. Cir. 1990), such that the culpable

19   conduct encourages infringement. *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293,

20   1306 (Fed. Cir. 2006) (Section III.B *en banc*); *see also Manville Sales Corp. v.*

21   *Paramount Systems, Inc.*, 917 F.2d 544, 553 (Fed. Cir. 1990) ("It must be

22   established that the defendant possessed specific intent to encourage another's

23   infringement and not merely that the defendant had knowledge of the acts alleged

24   _____

25   were able to pursue a claim with additional damages. The Court reminds Oplus that statements
    of this nature made to the Court may be binding, *see, e.g.*, *Organic Seed Growers and Trade*
26   *Ass'n v. Monsanto Co.*, 718 F.3d 1350, 1357–58 (Fed. Cir. 2013) (stating that "representations
    unequivocally disclaim[ing] any intent to sue" had a "similar effect" to a covenant not to sue),
27   and cautions Oplus against disclaiming any portion of its case that it may intend to pursue in the
28   future.

1   to constitute infringement."). It is therefore not enough that the alleged inducer

2   acts and thereby causes another to infringe. The alleged inducer must intend to

3   encourage that infringement by its acts. An alleged inducer cannot specifically

4   intend to encourage infringement if it does not know whether or not the induced

5   act would even be an infringing act—the alleged inducer must know that the act it

6   encourages is an act that constitutes infringement. *Cf. Manville*, 917 F.2d at 553–

7   54 (holding that a good faith belief that an underlying act is not infringing negates

8   the specific intent required for inducement).

9   The Supreme Court has held that an indirect infringer has sufficient knowledge

10   of a patent to induce infringement where the indirect infringer maintains willful

11   blindness to the existence of a patent. *Global-Tech*, 131 S.Ct. at 2068–69. Under

12   the *Global-Tech* rationale, the doctrine of willful blindness should apply equally to

13   the critical fact of underlying infringement and to the critical fact of the existence

14   of a patent.[3] Therefore, an alleged inducer may have sufficient knowledge that it

15   encourages an infringing act if the alleged inducer maintains willful blindness with

16   regard to whether the act it induces constitutes infringement. In order to show

17   willful blindness, the patent holder must show that the alleged inducer

18   "subjectively believed that there is a high probability that a fact exists" and that the

19   alleged inducer "took deliberate actions to avoid learning of that fact." *Id.* at 2070.

20   If Vizio subjectively believed that there was a high probability that their customers

21   infringed the '842 and '840 Patents by using the chipsets in Vizio televisions and

22   deliberately acted to avoid learning the methods and algorithms used by the

23   chipsets, Vizio would have been willfully blind to the infringing acts.

24

25   [3] In *Global-Tech*, the Court stated: "Given the long history of willful blindness and its wide
acceptance in the Federal Judiciary, we can see no reason why the doctrine should not apply in

26   civil lawsuits for induced patent infringement . . . ." 131 S.Ct. at 2069. However, the *Global-*

27   *Tech* Court declined to apply the willful blindness doctrine to the induced acts in that case
because the question was not at issue. *Id.* at 2070. However, as articulated by the Supreme

28   Court, the rationale appears to apply equally to both types of critical facts.

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1   In the television business, however, the parties do not dispute that the methods

2   and algorithms used by the chipsets are kept as trade secrets by the chipset

3   manufacturers. Noninfringement RUF at 3. Oplus argues that chipset

4   manufacturers occasionally provide service manuals to Vizio, but the evidence

5   shows only that the service manuals are sufficient to allow troubleshooting of the

6   television components. *Id.* Oplus points to no evidence that shows that the service

7   manuals describe the methods and algorithms used by the chipset. In addition,

8   Oplus provides no evidence of Vizio's subjective belief regarding infringement.

9   Vizio instead provides evidence that it subjectively believed it was not infringing

10   the '842 and '840 Patents for two reasons: first, there are numerous other methods

11   of motion adaptive de-interlacing, and second, Vizio believed the '842 and '840

12   Patents were invalid.[4] Noninfringement RUF at 21–22. The Court finds that Vizio

13   was not willfully blind to the methods and algorithms used by the allegedly

14   infringing chipsets because Oplus has advanced no evidence showing that Vizio

15   subjectively believed that there was a high risk that the chipsets infringed the '842

16   and '840 Patents or that Vizio took any deliberate steps to avoid learning how the

17   chipsets worked.

18   **B.   Invalidity**

19   **1.   Anticipation of the asserted claims of the '842 Patent**

20   Vizio argues that an article by R. Simonetti published in the journal "IEEE

21   Transactions on Consumer Electronics" ("the Simonetti article")[5] anticipates

22

23   [4] Oplus appears to argue that Vizio could not have had a good faith belief in the invalidity of
24   the '842 and '840 Patents because Vizio's designated 30(b)(6) witness had not reviewed the
     patents and did not know the basis for Vizio's belief in the invalidity of the patents. Vizio has
25   been represented by counsel since it gained knowledge of the patents, and Vizio's counsel
     alleged invalidity as an affirmative defense in its answer and provided invalidity contentions by
26   the Court's deadline of September 6, 2012. Oplus's implication that Vizio's corporate witness,
27   and not its legal counsel, should be responsible for its legal opinions is an improper red herring.

28   [5] R. Simonetti, et al., *A Deinterlacer for IQTV Receivers and Multimedia Applications*, IEEE
     Transactions on Consumer Electronics, Vol. 39, No. 3 (Aug. 1993).

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1 independent claim 7 and dependent claims 8 and 9 of the '842 Patent. The IEEE

2 published the Simonetti article in August 1993, more than five years prior to the

3 filing of the '842 Patent and more than four years prior to the December 18, 1997

4 critical date alleged by Oplus.

5 　　　Claim 7 of the '842 Patent is directed to deinterlacing an interlaced video

6 format. The Simonetti article states in the abstract that it offers a "deinterlacer for

7 IQTV receivers and multimedia applications." Although the preamble is not

8 necessarily limiting, the Simonetti article is analogous art that is directed to solving

9 the same problems addressed by the '842 Patent.

10 　　　The method of claim 7 comprises three steps. In step (a), an interlaced video

11 signal with sequential fields of pixels is received for the purpose of deinterlacing

12 the signal. In the Simonetti article, the authors describe a "video signal presently

13 received by a standard TV set" and errors produced by the interlaced sampling

14 structure. The Simonetti article states that the algorithm it describes is "capable of

15 converting an image sequence from interlaced to progressive format." Figure 1 of

16 the Simonetti article shows that the fields are sequential, as shown by the field

17 labels showing that, at a given point in time, there is a previous field, a present

18 field, and a next field. In the "present field" portion of Figure 1, pixel values are

19 shown in alternating horizontal rows, showing visually that the fields represent an

20 interlaced video signal. Each field in Figure 1 is made up of pixels, as shown by

21 labeled pixel X and the surrounding alphabetically enumerated pixels.

22 　　//

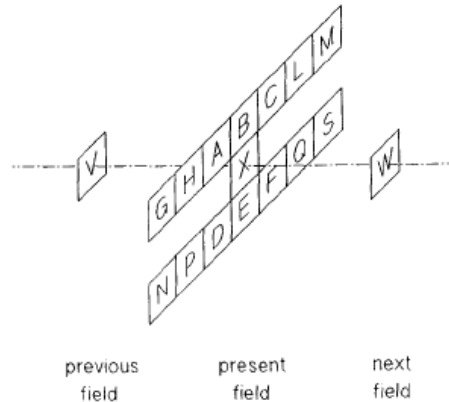23 　　//

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Figure 1: Pixels considered for the interpolation of the
pixel X belonging to a missing line.

9   The Simonetti article at 235. Simonetti therefore describes each of the limitations
10 of step (a).

11   In step (b) of claim 7, logical operations of linear combinations of values are
12 evaluated. The logical operations are selected from a Markush group including
13 "less than" and "and." The linear combinations of values are selected from a
14 Markush group including "absolute values of differences between said averages of
15 said known values of said temporal pixels and said known values of said spatial
16 pixels" and "a plurality of constants." Before evaluating Simonetti as prior art to
17 this claim limitation, the Court will address an issue of claim construction.
18 Specifically, the parties disagree as to whether more than one logical operation and
19 more than one linear combination, as opposed to only one logical operation and
20 only one linear combination, must be evaluated in assigning a value to each
21 missing spatial pixel.

22   Significantly, the terms "logical operations" and "linear combinations" are
23 plural. Therefore, more than one logical operation and more than one linear
24 combination must be evaluated in order for the method to be performed. The
25 signal received in step (a) includes a sequence of fields, each of which has more
26 than one pixel missing an assigned value. Since the method is performed for the
27 purpose of deinterlacing the video signal and step (c) describes assigning "values,"
28 i.e., more than one value, to "missing spatial pixels," i.e., more than one spatial

1 pixel, the plural appears to refer to the need to perform multiple evaluations in

2 order to assigned multiple values to different missing spatial pixels. No language

3 in the claim indicates that the plural terms "logical operations" and "linear

4 combinations" refer instead to multiple evaluations for each individual pixel value.

5   By using the term "compromising," claim 7 could include a method that used

6 more than one logical operation or more than one linear combination. In addition,

7 the specification describes a preferred embodiment in which multiple linear

8 combinations and "a series of logical operations are evaluated" in order to assign a

9 single missing pixel value, making it unlikely that claim 7 should be construed to

10 *exclude* multiple logical operations and linear combinations. However, the method

11 describes determining multiple values for multiple missing pixels. The claim uses

12 no language that would exclude an embodiment in which only one logical

13 operation and only one linear combination are each evaluated in determining a

14 value for only one of the multiple missing pixels in the interlaced video signal.

15 Therefore, the Court construes the term "evaluating logical operations of linear

16 combinations of values" to mean "evaluating one or more logical operations of one

17 or more linear combinations of values for each missing spatial pixel value."

18   In the Simonetti article, the "possible presence of motion" at the position of a

19 missing spatial pixel is "evaluated" using the following formula:

$$(|V - W| < h_1) \text{ and } \left(|\frac{V + W}{2} - \frac{B + E}{2}| < h_2\right)$$

The elements of the Simonetti formula correspond to the elements of the two

Markush groups of claim 7 as follows:

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1   Simonetti describes evaluating the missing pixel value using the linear

2   combination "absolute values of differences between said averages of said known

3   values of said temporal pixels and said known values of said spatial pixels" from

4   the Markush group, shown here as $|\frac{V+W}{2} - \frac{B+E}{2}|$. In addition, Simonetti uses the "less

5   than" and "and" logical operators, both of which are listed in the Markush group.

6   Simonetti therefore describes the step of evaluating logical operations of linear

7   combinations of values from the appropriate Markush groups as disclosed in step

8   (b).

9   In step (c) of claim 7, the "assignment of values to missing spatial pixels" is

10   decided upon "according to results of said logical operations." The Simonetti

11   formula shows a decision tree based upon the following if-then statement:

$$\text{if } \left[(|V - W| < h_1) \text{ and } \left(|\frac{V + W}{2} - \frac{B + E}{2}| < h_2 \right) \right]$$

$$\text{then } X = \frac{V + W}{2}$$

15   In the –if-then statement, Simonetti uses the results of the logical operations to

16   determine if a condition is met. If the temporally adjacent pixels are sufficiently

17   close in value, and the averages of the temporally and spatially adjacent pixels are

18   sufficiently close in value, the deinterlacer will apply the average of the temporally

19   adjacent pixel values to the missing pixel. The value of the missing pixel X is

20   determined based upon the outcome of the if-then statement. Simonetti therefore

21   describes deciding upon a missing spatial pixel value as disclosed in step (c).

22   Dependent claim 8 adds the limitation that the "sequence of fields of pixels . . .

23   features a current spatial field featuring missing spatial pixels and said spatial

24   pixels with known values located in said sequence of said fields, and at least one

25   temporal field featuring said temporal pixels with said known values located in

26   said sequence of said fields." Figure 1 of Simonetti shows a "present field" that

27   corresponds to the current spatial field, and the present field shows two rows of

28   pixels with known values, as indicated by pixels labeled alphabetically except X,

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1 which is described as a "missing pixel," and a row of pixels with no known value,

2 as shown by the empty row containing pixel X. Figure 1 of Simonetti also shows a

3 previous field and a next field, each with a known value where missing pixel value

4 X is shown in the present field.

5 Dependent claim 9 adds an additional limitation to claim 8 that the temporal

6 field with known values is selected from a Markush group including "immediate

7 previous said temporal field to said current spatial field located in said sequence of

8 said fields, and immediate next said temporal field to said current spatial field

9 located in said sequence of said fields." Simonetti labels the temporal fields of

10 figure 1 as "previous," "present," and "next," showing that the temporal pixel

11 values are selected from temporally adjacent fields in the sequence of fields.

12 Independent claim 14 has four steps. Three of the four steps are exactly the

13 same as the steps in claim 7. The additional step, step (b) incorporates the same

14 language as dependent claim 8 and one additional phrase stating that the known

15 pixel values in the temporal field are "for determining values of said missing pixels

16 of said current spatial field." The Simonetti formula shows that the temporal pixel

17 values V and W may be used to calculate the value assigned to the missing pixel

18 by the formula $X = \frac{V+W}{2}$. Dependent claim 15 adds the limitation of claim 9 to

19 claim 14.

20 The Simonetti article describes every claim limitation in claims 7, 8, 9, 14, and

21 15 of the '842 Patent. The asserted claims of the '842 Patent are anticipated under

22 35 U.S.C. § 102(b).[6]

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26 [6] Vizio also asserts that the '842 Patent is invalid as anticipated by U.S. Patent No. 6,529,637

27 issued to Carl Cooper, filed March 3, 1995 ("the Cooper Patent"). Since the Court finds that the
'842 Patent is anticipated by the Simonetti article, the Court finds the issue of anticipation by the

28 Cooper Patent to be moot.

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2.   Lack of Written Description Supporting and Lack of Enablement of the Asserted Claims of the '840 Patent

Vizio argues that the specification of the '840 Patent fails to provide adequate written description[7] and does not enable the invention for two reasons. First, claim 56 of the '840 Patent requires "calculating a value of the entropy of each" of several pixels (what Vizio calls "individual pixel entropies") "from said values of said pixel entropy counters of said pixels . . . ." According to Vizio, the '840 Patent does not describe how to calculate pixel entropy values from pixel entropy counters and therefore fails to show that the inventor had possession of the invention and does not enable a person of skill in the art to practice the invention. Second, claim 56 of the '840 Patent requires "calculating values of pixel inter-local neighborhood parameters for each" of several pixels "whereby each said value of each said pixel inter-local neighborhood parameter represents a regional sum of inter-local neighborhood weighted distances measured between said neighboring pixels . . . ." According to Vizio, distances between pixels provide no information about pixel values or pixel entropy and cannot be used to calculate pixel values or entropy. Since claim 56 would therefore be "inoperative as claimed," Vizio argues that it would be "invalid under either § 101 or § 112 of 35 U.S.C." *Raytheon Co.*

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[7] Oplus argues that Vizio should be precluded from asserting a defense based on the written description requirement of 35 U.S.C. § 112 ¶ 1 because Vizio did not list written description as a defense in its invalidity contentions. Although Vizio was required to include all its invalidity defenses in its contentions, Oplus was on notice that the written description defense was at issue as of this Court's Order Denying Vizio's Motion for Summary Judgment, Doc. No. 113 (Mar. 4, 2013) ("Order on MSJ for Ineligibility and Indefiniteness") ("To the extent the specification does not recite an exemplary formula for calculating entropy values, it only implicates enablement and written description concerns.") Vizio does not raise an argument that Oplus had no reason to expect; instead, Vizio raises the same argument it previously raised under a new statutory provision as suggested by the Court. Oplus cannot plausibly suggest that these are "new" legal theories of which it was unaware.

1   *v. Roper Corp.*, 724 F.2d 951, 956 (Fed. Cir. 1983) (holding that an inoperative

2   claim is invalid for lack of utility and for lack of enablement).[8]

3   i.   **Pixel Entropy Counter Values**

4   Claim 56 of the '840 Patent requires calculating a pixel entropy value from a

5   pixel entropy counter value. Oplus asserts that the step of calculating the entropy

6   value for individual pixels from pixel entropy counter values is described in the

7   specification of the '840 Patent at Cols. 14:17–15:64. That section of the

8   specification describes adjusting an entropy counter value by performing several

9   logical operations and increasing the entropy counter value according to the results

10   of those logical operations. The section continues by describing logical statements

11   evaluating the relationships between the entropy values of individual pixels.

12   Vizio's invalidity expert, Dr. Sheila S. Hemami, states that the specification

13   does not describe a method of calculating the entropy value of individual pixels,

14   but instead only describes a method of calculating relative relationships between

15   the entropy values of individual pixels. Oplus's expert responds that a person of

16   skill in the art would know how to calculate entropy values. Furthermore, the fact

17   that the specification shows the calculation of the relationships between entropy

18   values shows that the applicant assumed a person of skill in the art would be able

19   to calculate entropy values. Vizio's reply arguing that Oplus has not shown that a

20   person of skill in the art would be able to calculate an entropy value based upon an

21   entropy counter value is not enough to meet Vizio's burden of providing clear and

22   convincing evidence to overcome the presumption of validity of the '840 Patent.

23   Oplus does not bear the burden to prove the '840 Patent valid; Vizio bears the

24   burden to prove it is not.

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26   _____

27   [8] The Court previously denied Vizio's motion for summary judgment for invalidity under 35
     U.S.C. § 112 ¶ 2 with regard to the problem of inoperability due to the "weighted distances"

28   claim term. Order on MSJ for Ineligibility and Indefiniteness at 32–52.

1   Dr. Hemami's conclusory statement that "there is no way to correlate the two-

2   variable entropy calculation results with the claimed pixel entropy values" does not

3   clearly establish anything other than the fact that the two parties' experts disagree.

4   Neither party has evaluated the issue of whether a person of skill in the art would

5   be required to engage in undue experimentation in order to practice the invention

6   based on the disclosure. Without such appropriate underlying factual evidence,

7   this Court cannot determine that there is no factual dispute as to the lack of

8   adequate written description or that there is no underlying factual dispute as to lack

9   of enablement.

10   **ii.   Inter-local Neighborhood Weighed Distances**

11   Claim 56 of the '840 Patent requires calculating pixel inter-local neighborhood

12   parameter values "represent[ing] a regional sum of inter-local neighborhood

13   weighted distances measured between said neighboring pixels." Although the

14   parties characterize the dispute is several different ways, the dispute boils down to

15   a problem of mathematical units. A pixel value, which could include information

16   such as luminance or chrominance, is not defined in units of distance, and a

17   distance measurement alone does not provide relevant pixel value information.

18   In the specification, the '840 Patent describes adjusting pixel entropy counter

19   values based upon pixel inter-local neighborhood parameter values. The pixel

20   inter-local neighborhood parameter values are represented by distance

21   measurements, and distance measurements between a missing virtual pixel and its

22   defined neighboring pixels, would be constant distances for a fixed grid screen.

23   This breakdown of the calculation of pixel entropy counter values, however,

24   misses several essential components of claim 56. First, the distance is weighted.

25   A weight may be unitless, but it also may have units. A weight may be based on a

26   non-constant value. This Court has not been asked to construe the term

27   "weighted" and will not attempt to do so on the limited record and argument before

28   it. Second, the pixel inter-local neighborhood parameter itself is not an input used

1   for calculating the pixel entropy counter value; it is used as part of a logical if-then

2   statement. It is a mathematical tautology that the units on either side of an equal

3   sign must be equivalent, but there is no such mathematical tautology for an if-then

4   statement. Any input units may generate any output units. Third, and finally, the

5   output counter units of the if-then statement are used to calculate pixel entropy

6   values. Oplus's expert indicates that a person of skill in the art would know how to

7   calculate pixel entropies. Although the parties present no evidence showing what

8   that calculation would entail, presumably, it can include several inputs and account

9   for various input units.

10   Vizio has failed to present to the Court clear and convincing evidence that claim

11   56 as written would result in inoperability of the invention. Dr. Hemami's

12   statement that distance measurements alone "would not and could not yield a

13   measure of" entropy does not account for the full scope of information that would

14   be available to a person of skill in the art upon reading the specification.

15   Accordingly, Vizio has not shown that the phrase "a regional sum of inter-local

16   neighborhood weighted distances" renders claim 56 invalid for lack of written

17   description and lack of enablement.

18   **V.   MOTION TO COMPEL DISCOVERY**

19   Oplus moved to compel adequate responses to Interrogatories Nos. 1 and 7 and

20   sufficient documents to respond to Requests for Production Nos. 8, 23, 24, and 25.

21   The interrogatories and requests for production at issue request information and

22   documentation relating to, first, identification of the allegedly infringing Vizio

23   products or Vizio products incorporating allegedly infringing chipsets and second,

24   the annual sales and gross profits for the allegedly infringing products since 2006.

25   Vizio responded to the first group of discovery requests by identifying the

26   allegedly infringing products; now, Oplus seeks similar information for all of

27   Vizio's products, suggesting that Vizio has not accurately identified allegedly

28   infringing products. Oplus identifies no evidence showing Vizio's response was

1   not accurate. In addition, this Court will not allow Oplus to seek discovery

2   regarding products it never accused of infringement. Oplus, as the plaintiff, bears

3   the burden of identifying allegedly infringing products. *See, e.g.*, *Keranos, LLC v.*

4   *Silicon Storage Tech., Inc.*, No. 2:13-cv-17 (E.D. Tex. Aug. 5, 2013). Consistent

5   with the holding of other courts, this Court will not allow a last minute fishing

6   expedition to find new potentially infringing products. *See Samsung SDI Co. v.*

7   *Matsushita Elec. Indus. Co.*, No. 05-cv-9493, 2007 WL 4328482, at *2–3 (C.D.

8   Cal. May 17, 2007), *aff'd* 2007 WL 4357552 (C.D. Cal. June 25, 2007). Vizio has

9   identified Vizio products that incorporate the allegedly infringing technology as

10 requested in Interrogatory No. 1 and Request for Production No. 8. Vizio's

11 responses to these requests are sufficient.

12   Vizio objects to the second group of discovery requests, claiming that the

13 financial information for sales prior to Vizio's knowledge of the patents in suit was

14 irrelevant and that no allegedly infringing products were sold after the filing of the

15 complaint. Oplus admits that the financial information is irrelevant, but contends

16 that the financial information would lead to relevant discovery like damages due to

17 Vizio's direct infringement and elimination of non-recoverable damages from

18 Oplus's total damages calculation. Oplus, however, fails to explain both how sales

19 figures would relate to damages from what Oplus admits is *de minimis* use, *see*

20 *also Mirror Worlds, LLC v. Apple, Inc.*, 784 F. Supp. 2d 703, 724–25 (E.D. Tex.

21 2011) (holding that "sales [figures] cannot be used to determine damages for []

22 direct infringement of method claims"), and from what total damages calculation it

23 would subtract these non-recoverable damages. The financial information for sales

24 prior to the filing of Oplus's complaint would not lead to relevant discoverable

25 information. Vizio has identified and provided financial information relating to

26 sales of the allegedly infringing products after the date of filing of the complaint.

27 Therefore, Vizio's responses to Interrogatory No. 7 and Requests for Production

28 23, 24, and 25 are sufficient.

VI.   CONCLUSION

Having read and considered all of the briefs and arguments of the parties, the Court concludes that Oplus has not shown a disputed issue of material fact exists as to whether Vizio directly infringed the '842 and '840 Patents. Oplus has not shown a disputed issue of material fact exists as to whether Vizio possessed the requisite mental state in order to indirectly infringe the '842 and '840 Patents. The Simonetti reference anticipates asserted claims 7, 8, 9, 14, and 15 of the '842 Patent. Vizio has failed to show by clear and convincing evidence that the '840 Patent lacks sufficient written description to show that the inventor was in possession of the invention at the time of the filing of the application and does not enable a person of ordinary skill in the art to practice the invention. Vizio's responses to Interrogatories Nos. 1 and 7 and Requests for Production Nos. 8, 23, 24, and 25 are adequate.

The Court therefore **GRANTS** Vizio's Motion for Summary Judgment of Noninfringement and **GRANTS** Vizio's Motion for Invalidity of the '842 Patent, both with prejudice. Further, the Court **DENIES** Vizio's Motion for Invalidity of the '840 Patent, and **DENIES** Oplus's Motion to Compel Discovery.

IT IS SO ORDERED.

DATED: October 2, 2013   _____

Hon. Mariana R. Pfaelzer
United States District Judge

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